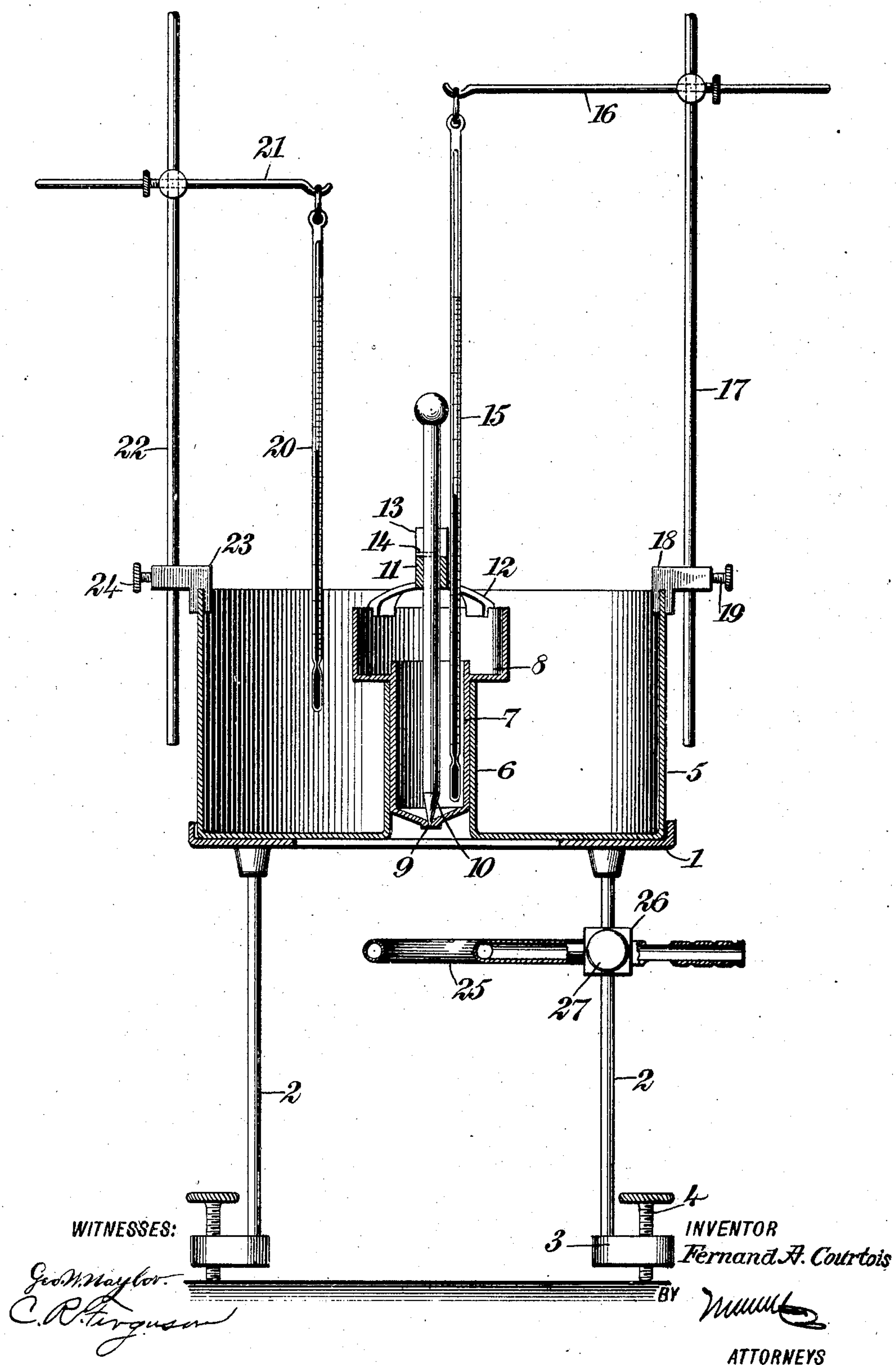


No. 788,251.

PATENTED APR. 25, 1905.

F. A. COURTOIS.  
VISCOSIMETER.

APPLICATION FILED JAN. 11, 1905.



# UNITED STATES PATENT OFFICE.

FERNAND A. COURTOIS, OF NEWARK, NEW JERSEY, ASSIGNOR TO FISKE BROTHERS REFINING COMPANY, OF NEW YORK, N. Y.

## VISCOSIMETER.

SPECIFICATION forming part of Letters Patent No. 788,251, dated April 25, 1905.

Application filed January 11, 1905. Serial No. 240,585.

*To all whom it may concern:*

Be it known that I, FERNAND A. COURTOIS, a citizen of France, and a resident of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Viscosimeter, of which the following is a full, clear, and exact description.

This invention relates to improvements in apparatus for determining the viscosity of oils, an object being to provide a device of this character by means of which the viscosity of the oil may be readily and accurately tested by permitting it under a predetermined degree of heat to pass through an orifice of given dimensions for a certain length of time.

A further object is to produce a viscosimeter that will be simple in construction, having no parts liable to get out of order, and that may be easily cleaned.

I will describe a viscosimeter embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which the figure is a sectional elevation of a viscosimeter embodying my invention.

Referring to the drawing, 1 designates a supporting-ring mounted on legs 2, on the lower ends of which are outward extensions 3, in which are arranged leveling-screws 4. Supported on the ring 1 is a container or bath 5 for oil, and extended upward at the center of the same is a tube 6, which is open at the bottom. Removably placed in the tube 6 is a testing-cup 7, and extended around the upper end portion of this cup 7 is a trough 8 for receiving oil that may pass over the upper end of the cup as the said oil expands under heat. The lower end of the cup 7 is provided with an outlet-orifice 9, normally closed by a needle-valve 10, the stem of which is guided in a sleeve 11, extended upward from a spider 12, removably seated on the upper end of the trough 8. The sleeve 11 is provided with slots 13, in either one of which a pin 14 on the valve-stem is designed to pass when the valve is in its closing position. To hold the valve open, the pin 14 is to be engaged with the upper end of the sleeve.

When the device is in use, a thermometer 15 is suspended in the cup 7. As here shown, the thermometer 15 is supported by an arm 16, adjustably connected to a rod 17, the said rod 17 being adjustable in a block 18, engaging the upper edge of the bath 5, and the said rod 17 is held as adjusted in the block by means of a thumb-nut 19. Extended into the bath 5 is a thermometer 20, the said thermometer being suspended from an arm 21, adjustably connected to a rod 22, which is movable through a block 23, supported on the upper edge of the bath and held in position by means of a thumb-nut 24.

Arranged underneath the bath 5 is a heating device, here indicated as a Bunsen burner 25. This burner may be supported in any suitable manner. Preferably, however, it will be attached to one of the legs 2 by means of a block 26, held in position by a thumb-nut 27.

In the operation oil is to be placed in the bath 5 and also in the cup 7, the level being close to the top thereof. Then after leveling the apparatus by means of the screws 4 and placing the thermometers in position the gas issuing from the burner 25 is to be ignited, and when the same degree of temperature is indicated in the two thermometers, this degree being of course predetermined, depending on the character of the oil, the valve 10 is to be raised and the oil permitted to pass in drops from the cup 7 into a suitable receptacle or graduate, and by means of a stop-watch or the like the time elapsed in the passing of the oil through the orifice 9 into a suitable receiver will give the viscosity of the oil.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A viscosimeter comprising an oil-container having an upwardly-extended tube open at the bottom, a test-cup removably placed in said tube and having an opening in its lower end, a valve for said opening, a heating device arranged below the container, and means for supporting thermometers in the container and test-cup.

2. A viscosimeter comprising a support, an oil-container arranged on said support and having a central upwardly-extended tube open



at the upper and lower ends, a test-cup for removably engaging in said tube, the said test-cup having a trough at its upper end, and an opening through its lower end, a valve for  
5 said opening, a burner arranged underneath the container, and means for supporting thermometers in the container and cup.

3. A viscosimeter comprising a ring-like support, an oil-container arranged thereon  
10 and having a central upwardly-extended tube open at the bottom, a test-cup removably placed in said tube and having a trough at its upper end and also having a perforation in its lower end, a valve for said perforation, a  
15 burner arranged under the container, and adjustable thermometer-supports.

4. A viscosimeter comprising a ring-like support, legs connected to said support, leveling devices on the legs, a container or bath  
20 removably placed on the support and having an upwardly-extended central tube open at the bottom, a test-cup removably placed in said tube and having a perforation in its lower

end and also having a trough at its upper end, a needle-valve for controlling said opening, 25 and a heating device supported by one of the legs.

5. A viscosimeter comprising an oil-container having a central upwardly-extended tube open at the lower end, a test-cup remov- 30 ably arranged in said tube and having an opening in its lower end, and also having a trough at the upper end, a spider supported on the outer wall of said trough, a sleeve on the spider, a valve guided through said sleeve and 35 adapted to control the opening through the lower end of the cup, and a heater arranged below the container.

In testimony whereof I have signed my name to this specification in the presence of two sub- 40 scribing witnesses.

FERNAND A. COURTOIS.

Witnesses:

LEWIS S. HOYT,  
FRED J. SNYDER.